

REMARKS

In the present amendment, claims 1, 5-11, and 13-15 have been amended, claims 4 and 12 have been cancelled, and new claim 16 has been added.

Applicants note that claim 1 has been amended by adding the features of now cancelled claim 4. Moreover, amendments to the claims have been made to address the indefiniteness rejections under 37 C.F.R. § 112, second paragraph, and to even further comply with idiomatic English and standard U.S. practice.

New claim 16 has been added which recites the feature that “the polyether sulfone resin has a hydroxyl group or an amino group at a proximal end, and is soluble in a solvent,” which has been deleted from claim 6.

No new matter has been added.

Rejections under 35 U.S.C. § 112, second paragraph:

The Office Action rejects claims 1-15 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The Office states that the “claims are generally narrative and indefinite, failing to conform with current U.S. practice.”

In response, Applicants note that claims 1, 5-11, and 13-15 have been amended to further comply with idiomatic English and standard U.S. practice. In view of the claim amendments, withdrawal of the indefiniteness rejections is respectfully requested.

Rejections under 35 U.S.C. § 102

The Office Action makes the following rejections under 35 U.S.C. § 102:

- claims 1 and 9 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Ohya et al. (U.S. Patent No. 5,686,172);
- claim 1 is rejected under 35 U.S.C. § 102(a) or (e) as allegedly being anticipated by Arakawa et al. (U.S. Patent No. 6,733,869);
- claims 1-3 and 9-11 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Poutasse et al. (U.S. Patent No. 5,622,782); and
- claims 1-3 and 9-11 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by JP 2003-229648, hereinafter “JP’648.”

In response, Applicants note that in an attempt to advance prosecution of the present application, and without expressing agreement with or acquiescence to the rejection, independent claim 1 has been amended to include the subject matter of now cancelled claim 4. Applicants note that claim 4 has not been rejected over Ohya et al, Arakawa et al., Poutasse et al., or JP’648, wherefore withdrawal of the 102 rejections is respectfully requested.

Rejections under 35 U.S.C. § 103(a)

The Office Action makes the following rejections under 35 U.S.C. § 103(a):

- claims 4-8 and 12-15 as allegedly being unpatentable over JP’648 in view of Komiyatani et al. (U.S. Patent No. 6,447,915) or Hosagane et al. (U.S. Patent No. 5,439,986); and
- claims 1-15 as allegedly being unpatentable over Poutasse et al. (U.S. Patent No. 5,522,433), hereinafter “Poutasse II;” in view of Komiyatani et al. or Hosagane et al.

With regard to the rejections of claims 4-8 and 12-15 over JP'648 in view of Komiyatani et al. or Hosagane et al., the Office Action admits that JP'648 "does not teach the claimed epoxy resin composition including an aromatic polyamide resin or a polyether sulfone resin." The Office contends, however, Komiyatani et al. or Hosagane et al. remedy the deficiency of JP'648.

Applicants respectfully disagree with the rejection. Applicants note that neither Komiyatani et al. nor Hosagane et al. teaches an ultra thin primer resin layer that is "formed using a resin mixture consisting of 20 to 80 parts by weight of an epoxy resin that may contain a curing agent, 20 to 80 parts by weight of a solvent-soluble aromatic polyamide resin polymer, and an appropriate quantity added as required of a curing accelerator." The Office Action makes a very general statement that one skilled in the art would have been motivated to incorporate the presently-claimed resin mixture to the copper foil disclosed in JP'648 in view of the disclosure of Komiyatani et al. or Hosagane et al., however, the Office Action fails to support its assertion by referring to relevant teachings in Komiyatani et al. or Hosagane et al.

Applicants note that Komiyatani et al. is directed to an interlaminar insulating adhesive that requires four essential components, i.e., a) a sulfur-containing thermoplastic resin having a weight-average molecular weight of 10^3 to 10^5 , b) a sulfur-containing epoxy or phenoxy resin having a weight-average molecular weight of 10^3 to 10^5 , c) a multifunctional epoxy resin having an epoxy equivalent of 500 or less, and d) an epoxy-curing agent (see, e.g., Komiyatani et al., Abstract). Applicants respectfully note that there is no teaching in Komiyatani et al. that discloses or suggests the presently claimed resin mixture, as well as applying such resin composition for use in the presently claimed copper foil with an ultra thin adhesive layer for a printed wiring board

With respect to Hosagane et al., Applicants point out that Hosagane et al. discloses a specific resin composition that requires three components: a) an aromatic polyamide oligomer having polymerizable unsaturated groups at both terminal or within side chains, b) a maleimide compound, and c) an epoxy resin. There is no disclosure or reason in Hosagane et al., to make or use the resin composition of the presently claimed invention.

Applicants note that if the Office maintains the rejections, the Office is respectfully requested to support its assertion as to why the presently claimed resin composition would have been obvious in view of the teachings in Komiyatani et al. or Hosagane et al.

In view of the foregoing, Applicants respectfully request withdrawal of the rejection of claims 4-8 and 12-15 over JP'648 in view of Komiyatani et al. or Hosagane et al.

Concerning the rejection of claims 1-15 over Poutasse II in view of Komiyatani et al. or Hosagane et al., the Office Action asserts that Poutasse II teaches a copper foil that falls under the presently-claimed roughness value and applies an epoxy adhesive layer. The Examiner admits that Poutasse does not teach the presently claimed thickness of the adhesive layer and also does not incorporate an aromatic polyamide or polyether sulfone resin. Similarly as argued in the obviousness rejection using JP'649 as primary reference, the Office Action argues that it would have been obvious to modify the resin composition of Poutasse II by adding an aromatic polyamide or polyether sulfone resin based on the teachings in Komiyatani et al. or Hosagane et al.

In response, as discussed above, Applicants respectfully disagree that the disclosures of Komiyatani et al. or Hosagane et al. would have been motivated one skilled in the art to modify the resin composition disclosed in Poutasse II to arrive at the presently-claimed invention. No

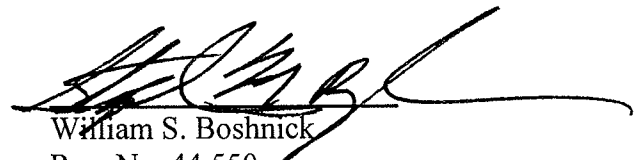
teaching can be found in Komiyatani et al. or Hosagane et al. that suggests the presently claimed “resin mixture consisting of 20 to 80 parts by weight of an epoxy resin that may contain a curing agent, 20 to 80 parts by weight of a solvent-soluble aromatic polyamide resin polymer, and an appropriate quantity added as required of a curing accelerator” for the use as resin composition in Poutasse II. Accordingly, Applicants respectfully request withdrawal of the obviousness rejection over Poutasse II in view of Komiyatani et al. or Hosagane et al. as well.

CONCLUSION

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections of record, and allow each of the pending claims. Applicants therefore respectfully request that an early indication of allowance of the application be indicated by the mailing of the Notices of Allowance and Allowability.

If there should be any questions, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully Submitted,
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